

ABSTRACT OF THE DISCLOSURE

The present invention relates to microporous materials (i.e., materials presenting high porosity, often referred to as aerogels) based on syndiotactic polystyrene and characterized by the presence of cavities with nanometric dimensions characteristic of the  $\delta$  crystalline form and to processes for their preparation. These materials are capable of absorbing with fast kinetics volatile organic compounds from liquid or gaseous phases, also when such components are present at very low concentrations.